

# EXHIBIT B



**RJH & Associates, Inc.**

*Building Envelope Consultants and Structural Engineers*  
Miramar Beach, FL • Pensacola, FL • Houston, TX

# Storm Damage Report

for

**Tri Investments**  
301 Flecha Ln,  
Laredo, TX 78405



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**TRI INV000601**



## RJH & Associates, Inc.

*Building Envelope Consultants and Structural Engineers*  
Miramar Beach, FL • Pensacola, FL • Houston, TX

### Project Information

<b>Client:</b> Raizner Slania  <b>Project Address:</b> Tri Investments 301 Flecha Ln Laredo, TX 78405  Webb County	<b>Insurance Carrier:</b> United Fire & Casualty  <b>Policy #:</b> 85318342 <b>Claim #:</b> 4220106675  <b>Date of Loss:</b> May 21, 2017  <b>Claim Type:</b> Wind/Hail
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### FIELD REPORT FOR INITIAL STORM DAMAGE INVESTIGATION

#### 1.0 **Background Information:**

Forensic Building Science, Inc. (FBS) was contacted by Raizner Slania Law Firm (RS) to provide an inspection of the exterior and interior of the above-mentioned property and to ascertain the extent of damage caused by wind and hail which was reported to have occurred on or around May 21, 2017. RJH & Associates, Inc. (RJH) worked in cooperation with FBS to perform their inspections.

#### 1.1 **NOAA Storm Events Database – May 21, 2017**

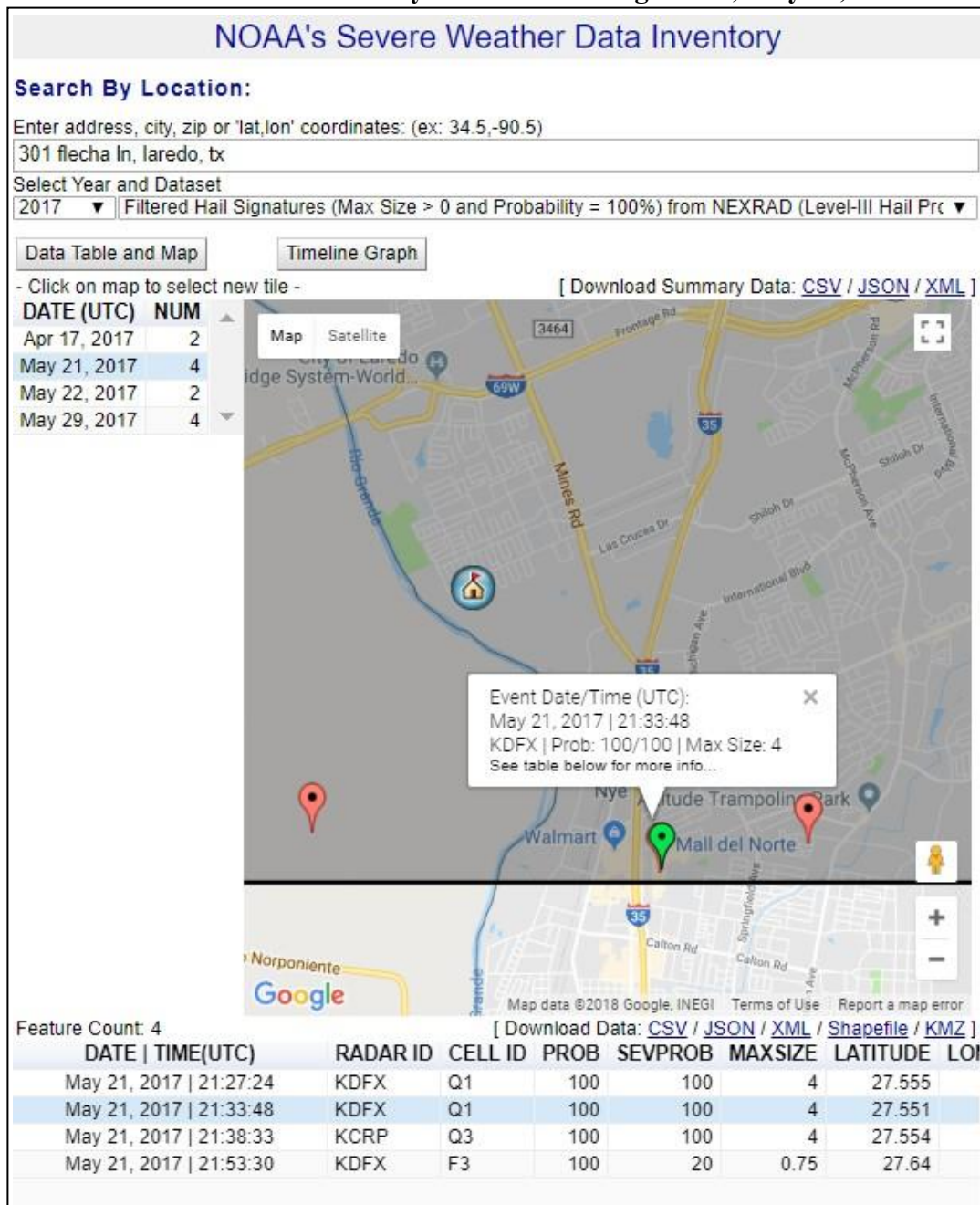
**Event Details: 83 knots (95 mph) wind speeds approximately 3.08mi east of the property.**

<https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=698319>

Event	Thunderstorm Wind
Magnitude	83 kts.
State	TEXAS
County/Area	WEBB
WFO	CRP
Report Source	NWS Storm Survey
NCEI Data Source	CSV
Begin Date	2017-05-21 15:28 CST-6

Begin Location	<b>1S (LRD)LAREDO INTL ARP</b>
Begin Lat/Lon	<b>27.6004/-99.5173</b>
End Date	<b>2017-05-21 15:44 CST-6</b>
End Location	<b>2N LAREDO</b>
End Lat/Lon	<b>27.5742/-99.4725</b>
Deaths Direct/Indirect	<b>0/0</b> (fatality details below, when available...)
Injuries Direct/Indirect	<b>0/0</b>
Property Damage	<b>20.00M</b>
Crop Damage	<b>0.00K</b>
Episode Narrative	Scattered thunderstorms developed over northeast Mexico during the afternoon of the 21st as an upper level disturbance moved across northern Mexico. An intense thunderstorm moved across the Rio Grande into the city of Laredo. Extensive wind damage occurred in the northern parts of Laredo from 80 to 95 mph wind gusts. Five homes were destroyed while around 50 single family and multi-family homes received major damage. Minor damage occurred to around 150 single family and multi-family homes. Major damage occurred to five businesses. Hail from golf ball to baseball size inflicted damage to roofs and cars across the city. After heavy rainfall with this storm, a second storm early in the evening produced heavy rainfall that led to flash flooding in the city.
Event Narrative	Damage survey in connection with a severe thunderstorm revealed straight-line wind damage along a line around 5 miles in length and 1 mile in width across northwest Laredo. The damage was from west of the intersection of Interstate 69W and Mines Road to the intersection of east Del Mar Boulevard and McPherson Road. Damage was widespread through this area with numerous large tree limbs snapped, shingle damage to homes, dozens of utility poles bent or broken. The most significant damage occurred at the U.S. Customs facility near World Trade Bridge #3 and to homes in the Villas San Agustin neighborhood. At the U.S. Customs facility, several tractor trailers were overturned, and extensive damage occurred to the metal roof of this facility with several air conditioners blown off. Wind gusts were estimated to be between 80 and 95 mph. The World Trade Bridge was closed to commercial cargo traffic for nearly a week. Within the Villas San Agustin subdivision, 4 new homes that were under construction, slid off their foundations and collapsed. Debris from these properties impacted several nearby homes causing extensive damage. Numerous homes in this subdivision lost shingles. Laredo Fire Station #9, located near Interstate 69 and Mines Road, lost its metal roof. Farther southeast, in the Dominion Del Mar, Terra Hills, and Northview subdivisions, numerous large tree limbs were

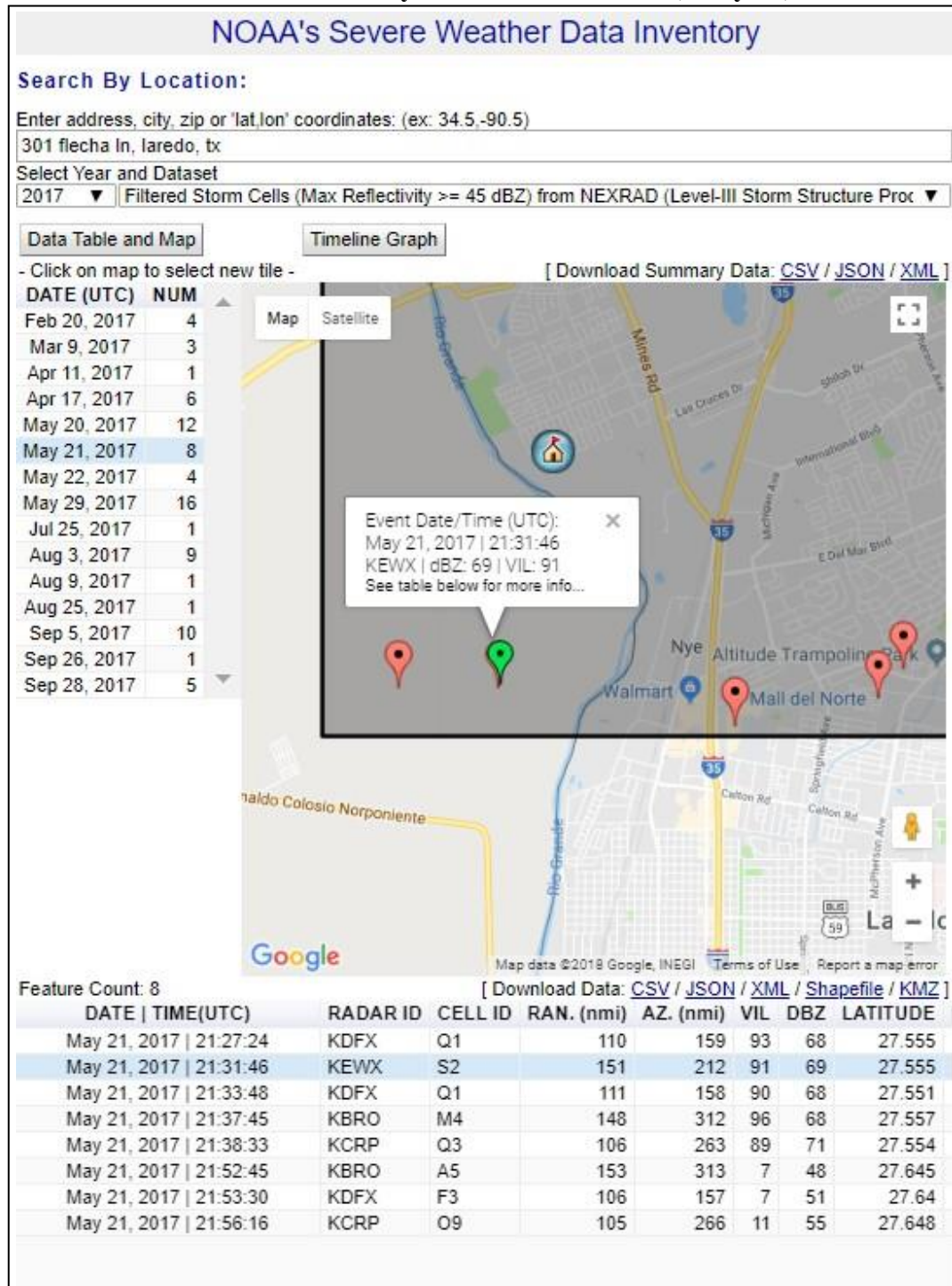
## 1.2 NOAA Severe Weather Inventory: Filtered Hail Signature, May 21, 2017:



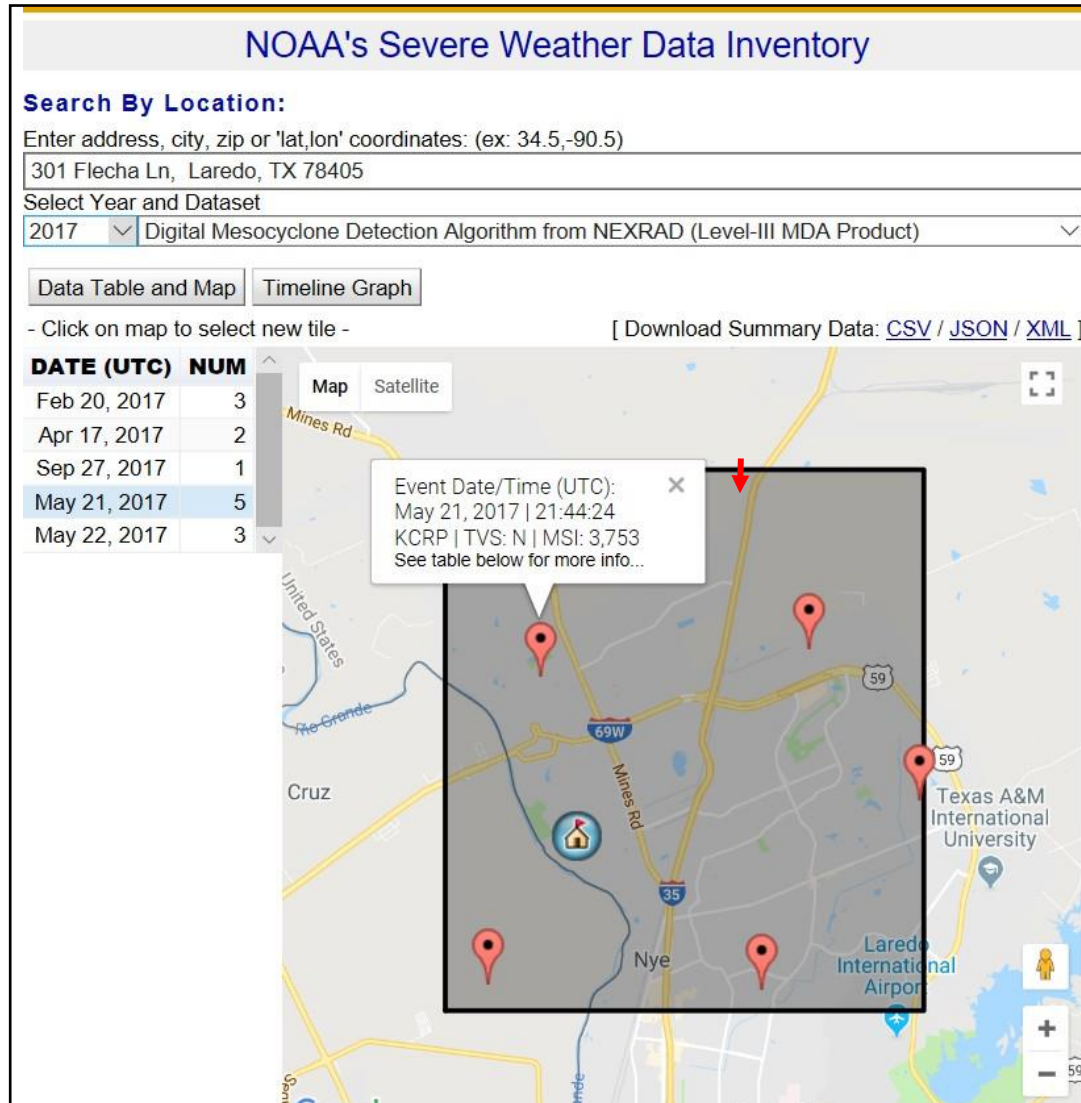
*Note: Times are listed in Universal Time (UTC), which is 5 hours ahead of Laredo's Central Time.*



## 1.3 NOAA Severe Weather Inventory: Filtered Storm Cells, May 21, 2017:



1.4 NOAA Severe Weather Inventory: Digital Mesocyclone Detection Algorithm May 21, 2017:



1.5 News Reports for May 21, 2017 Storm Event:

- **The Watchers:** "Severe storm closes international border bridge in Laredo, US-Mexico" <https://watchers.news/2017/05/22/nuevo-laredo-tornado-thunderstorm/>
- **Laredo Morning Time:** "The most compelling photos from this summer's massive Laredo thunderstorm" <https://www.lmtonline.com/galleries/slideshow/Laredo-slammed-by-severe-thunderstorm-145556/photo-12954108.php>
- **The Weather Channel:** "Border Complex Smashed by Storm" <https://weather.com/storms/severe/video/border-complex-smashed-by-storm>

**1.6 Satellite Image of the Property:**



*Google Earth imagery dated March 19, 2018.*

**1.7 Inspection personnel present:**

- Kevin Steinke, Field Investigator May 30-31, 2018
- Rob rt Hinojosa, PE, RRC, REWC, RWC, RBEC  
President, RJH & Associates, Inc. June 14, 2018

**1.8 The following claim related documents have been received:**

- Casa Engineering Civil and Structural Associates, dated November 3, 2017
- Randall Talkington, Public Adjuster repair estimate (\$274,255.13 RCV), dated February 15, 2018
- Randall Talkington, Public Adjuster repair estimate (\$274,255.13 RCV), dated February 23, 2018

**1.9 The following additional documents were used for reference:**

- According to the City of Laredo, TX website, they have adopted the following building codes:
  - o 2012 International Building Code
  - o 2015 International Energy Conservation Code
  - o 2012 International Mechanical Code
  - o 2012 International Plumbing Code
  - o 2011 National Electrical code
  - o 2012 International Existing Building Code
  - o Referenced codes can be found here:  
[http://www.cityoflaredo.com/building/html/building\\_codes.htm](http://www.cityoflaredo.com/building/html/building_codes.htm)



- Photographs from site visits by FBS.
- Haag Education Haag Certified Roof Inspector Program, Commercial Edition.
- SPRI, Construction-Generated Moisture and Its Effect on Roofing Systems, August 2008.
- E108-10a Standard Test Methods for Fire Tests of Roof Coverings.
- RS-738-Insulation Installation Instructions
- ASHRAE R-Value Climate Zone Map
- Standards: FM 4470, UL 1256, and CAN/ULC – S126M
- Building Damage Issues in Tornadoes. Severe Local Storms 22<sup>nd</sup> Annual Conference. 2004 Marshall.
- Wind Speed Analyses of Tornadoes Based on Structural Damage. Wolde-Tinsae, Porter and McKeown. July 1985
- E2128-17 Standard Guide for Evaluating Water Leakage of Buildings
- AISC: “Steel Construction Manual” American Institute of Steel Construction.
- AISI: “Cold Formed Steel Design Manual” American Iron and Steel Institute.
- ASHRAE R-Value Climate Zone Map
- Standards: FM 4470, UL 1256, and CAN/ULC – S126M
- MCA Metal Roofing Installation Manual
- MCA Technical Bulletin: Static and Dynamic Analysis of Metal Roof Systems
- MCA Technical Bulletin: Roof Covering Repair Requirements and the International Codes
- “Sealing and Flashing Metal Roofs” Rob Haddock, [publication name?] January 2000
- Mazie, Joseph, and David Lashmore. "Electroplated Coatings." ASM Handbook, Volume 13, Corrosion. Materials Park, OH: ASM International, 1987. 421-431.
- FEMA: Metal Roof Systems in High-Wind Regions
- Krenshaw and Koontz article on Hailsize
- Galvalume Steel Roof Hail Damage: J.E.I. Metallurgical, Inc, R. Craig Jerner, Ph.D., P.E.
- United States Steel Technical Bulletin # TBP 2012.17: HAIL DAMAGE ON COATED SHEET STEEL ROOFING
- ASTM E 1514 98 Standard Specification for Structural Standing Seam Steel Roof Panel Systems.

## 2.0 **Structure Information:**



*Google Earth imagery of terrain surrounding property dated March 19, 2018.*

- 2.1 The area is surrounded by residential and commercial properties with an open field to the southwest which is consistent with the definition of Exposure C in ASCE 7.

According to the Webb County Appraisal District website, the 10,336 ft<sup>2</sup> building at 301 Flecha Lane was originally constructed in 1990. The building is steel framed with metal panel siding. The roof is covered with metal roofing. The one-story building is a slab-on-grade structure with metal walls. The front elevation contains brick and wood texture coated walls. The exterior walls consist of painted metal panels and concrete. The roof is a gable style that is covered with raised rib metal roofing panels. The panels are mechanically fastened to Purlins

- 2.2 Prior to the time of our inspection, no repairs had been made to the roof, or to the damaged interior areas.

## 3.0 **Site Observations:**

### 3.1 **Exterior Observations**

All accessible areas of the exterior were inspected. The metal siding was inspected for impact damage from wind-blown debris and wind damage caused by overloading of the panels. In addition, mechanical damage to panels was noted when observed. A representative number of damaged areas were photographed and

documented. See figures 1 – 54 of *Tri Investments – FBS Photo Log 301 Flecha Exterior Inspections Photos 05-31-18 KJS* for documented damage.

Damage to the exterior related to wind and hail includes, but may not be limited to, the following:

- Crimping to metal paneling between lateral bracing members
- Wind damage to wood soffit paneling causing detachment
- Debris damage to fence
- Metal cap at roof to wall blown off



Crimped metal paneling



Wind damaged wooden soffit



Damaged fencing from tree



Damaged fencing from tree

### 3.2 Roof Observations

A complete visual inspection of the metal roof was performed in addition to the performance of test squares. Both hail and wind damage were found on the roof. According to the owner, the roof was not functioning properly after the storm event and water damage from the roof was observed throughout the building. See figures 56-199 of *Tri Investments – FBS Photo Log 301 Flecha Exterior Inspections Photos 05-31-18 KJS* for documented damage.

### 3.3 Metal Roof Damage

Damage to the roof related to wind and hail includes, but may not be limited to the following:

- Impact damage due to hail was observed throughout the metal roof.



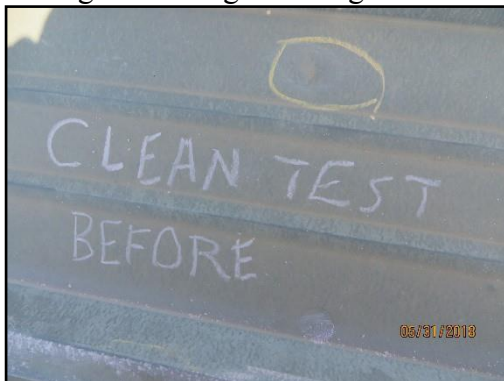
- In a majority of these impacts, dirt and debris could be observed within the impact mark consistent with restricted drainage of water.
- Two clean tests were performed on separate impact damaged areas. Once the dirt and debris were removed from the impact damaged area, deformation and premature coating failure of the metal roofing was readily observable.
- A sample square was performed on the metal roof, the results are as follows:
  - Sample Square #1
    - 10' x 10'
    - 12 impacts due to hail identified
- Crimping was observed throughout the roof consistent with wind damage.
- Torn flashing was observed on the left elevation rake.
- Oil canning
- Uplift canning at Fasteners



Damaged roof edge flashing



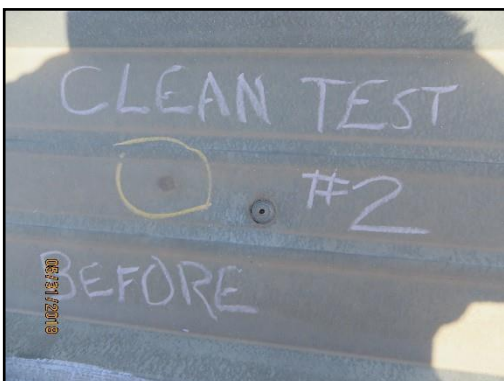
Impact damage



Clean test #1 before



Clean test #1 after

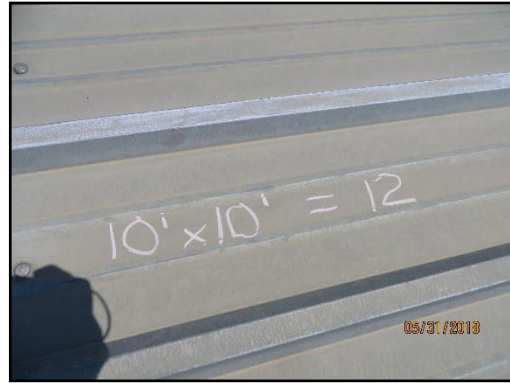




Clean test #2 before



Clean test #2 after



Test square overview

Test square size and amount of hail hits



Oil canning at fastener and bent overlaps



Typical storm created openings



Figure # 169 from photo report cropped to show fracture

### 3.4 Interior Observations

All accessible areas of the interior of the building were inspected. No repairs had been made throughout the interior after the storm event. Interior wind and water damage to suspended ceiling system was observed. A representative number of damaged areas were photographed and documented. See figures 1-31 of *Tri Investments – FBS Photo Log 301 Fleche Interior Inspections Photos 05-31-18 KS* for documented damage.

#### Entrance/Hallway:

- Slight water damage observed in photos. Wind damage to ceiling grid evident in photos.

Main Office:

- Severe wind damage to suspended ceiling system. Water damaged ceiling tiles also observed.

Office 2:

- Slight water damage to ceiling tile.

Conference Room:

- Water damage to dropped ceiling tiles.

Back Bathroom:

- Movement to ceiling grid.



Water damaged ceiling tile



Water damaged ceiling tile



Wind damaged ceiling



Wind damaged ceiling

**4.0 Causation Statement:**

Based upon evidence collected from our weather research and the physical inspection of the building itself, we have concluded that the roof system, portions of the exterior and the interior were damaged by wind and hail which occurred during the storm event. In our opinion, complete replacement of the roof system, damaged exterior cladding, and the affected interior components of the building is necessary.

Based upon our training, education, experience, a reasonable degree of building science and engineering certainty and the information gathered during our inspection and weather data search, it is more likely than not that the observed damage to the interior is a result of the storm event. On May 21, 2017 there was sufficient wind and hail to cause the above-referenced damage. In our opinion, on the date of loss, winds exceeded the design of the roof and wall cladding components. Hail more than 2 inches in diameter fell at the property on the date of loss.

Failure to completely remove and replace the damaged building components at the property will result in additional damage to the interior due to water intrusion. In our opinion, additional costs to repair will be required to meet the current required code or manufacturer's installation instructions. Based on our inspection of the interior, there is water intrusion occurring at isolated locations.

## **5.0 Conclusions:**

Hail caused damage to the roof system and exterior occurred on May 21, 2017. According to our review of NOAA reports, hail between 1.75" and 4.00" in size fell within the vicinity of the property. Since the May 21, 2017 storm, multiple locations in the buildings are reported to leak after rain events. In our opinion, full replacement of the roof system, metal flashings, siding, gutters and downspouts will be required.

Damage to the metal roof panels from hail was caused by creating indentations that collect pollutants, sediment and water, causing premature corrosion to occur at the impact locations. Damage caused by wind included metal crimping. Removal of the damaged metal panels will be required. Based on similar projects and the age and condition of the panels, surgical repairs to individual panels will likely damage surrounding panels. Therefore, we are recommending complete replacement of the metal roof and metal wall systems.

Any damage to structural elements (roof deck, clips, fasteners, purlins) will require sealed details from a licensed civil or structural engineer before reuse.

In our opinion, the warehouse space is not conditioned space and therefore no added costs for insulation are required.

Recognized definitions of damage state that any "disadvantage or loss of value, use and longevity" constitutes damage. RJH and FBS maintain that the hail has certainly devalued the roof system and the worth of the building. The roof system's longevity is in question after the hail storm. The "pockets" created by the hail impacted dents will allow water to stand on the roof, and this could be very detrimental to the panel surface in time.



RJH and FBS believe that there is sufficient evidence that the wind and hail from the storm event likely caused the kind of damage to warrant the replacement of the roof, gutters, downspouts and the wall panels. The observed damages most definitely have a monetary effect on the property value(s) to the owner in future discussions and planning.

#### **6.0 Requirements / Recommendations:**

Based on the findings during the investigation, we recommend the following steps be taken:


1. Follow all applicable building codes.
2. Remove all existing metal roofing panels down to the steel framing.
3. Replace all removed roofing materials and appurtenances with new similar materials.
4. Remove and replace all damaged exterior metal wall panels.
5. Repair any storm damage related interior water damage.
6. Remove water damaged interior materials and effect repairs pursuant to current published guidelines by ANSI/PICRIC S500 – “Water Damage Restoration.” This will include interior environmental controls.
7. Alternate construction techniques may be acceptable provided a licensed design professional approves, signs and stamps plans and/or shop drawings for these repairs. Means and methods are the contractor’s responsibility.
8. Conform to any special inspection and testing schedules issued by the engineer.
9. Contractor is solely responsible for adherence to all applicable safety requirements for work at heights.
10. Contractor shall remain on alert for signs of mold during repairs and construction.
11. Stability during construction is the responsibility of the contractor. Structure as detailed is intended to be stable once all sheathing and fasteners are in place.

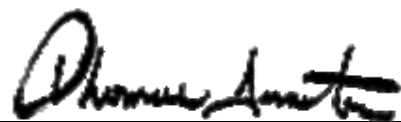
Discovery is ongoing. Additional testing and inspections may need to be performed and additional and/or supplemental information and opinions may be contained in future reports issued by Forensic Building Science, Inc and RJH & Associates. This report is the exclusive property of the client noted previously and cannot be relied upon by a third party. Copies of this report are released to third parties only by written permission of the client.

Please contact our office should you have any questions or need additional information.

Respectfully submitted,

  
\_\_\_\_\_  
Kevin Steinke, Forensic Building Science, Inc.  
Field Investigator  
July 9, 2018  
Date

  
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Ryan Nierengarten, Forensic Building Science, Inc.  
Director of Field Operations  
July 9, 2018  
Date

  
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Tom Irmiter, Forensic Building Science, Inc.  
President, Building Causation, Code and Damages Consultant  
July 9, 2018  
Date

  
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Robert Hinojosa, PE, RRC, RWC, REWC, RBEC  
RJH & Associates, Inc., President/CEO  
July 9, 2018  
Date

